

FORM PTO-1390  
(REV 5-93)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

Page 1

**TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A  
FILING UNDER 35 U.S.C. 371**

951/48802

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

**09/555144**INTERNATIONAL APPLICATION NO.  
19843421.9 **EP 8107511**INTERNATIONAL FILING DATE  
November 25, 1997PRIORITY DATE CLAIMED  
November 24, 1998TITLE OF INVENTION  
DEVICE FOR CONTROLLING A DISPLAY SCREEN

APPLICANT(S) FOR DO/EO/US

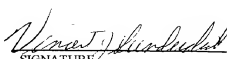
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 33.
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2)).
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)) (**unexecuted**).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

**Item 11. to 16. below concern other document(s) or information included:**

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.  
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:



U.S. APPLICATION NO. (if known, see 37 CFR 1.5)		INTERNATIONAL APPLICATION NO.		ATTORNEYS DOCKET NUMBER							
09/555144		19843421.9		951/48802							
17. <input type="checkbox"/> The following fees are submitted:				<table border="1"> <tr> <td>CALCULATIONS</td> <td>PTO</td> </tr> <tr> <td></td> <td>USE</td> </tr> <tr> <td></td> <td>ONLY</td> </tr> </table>		CALCULATIONS	PTO		USE		ONLY
CALCULATIONS	PTO										
	USE										
	ONLY										
Basic National Fee (37 CFR 1.492(a)(1)-(5)):  Search Report has been prepared by the EPO or JPO ..... \$840.00 \$840.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) ..... \$670.00 No international preliminary examination fee paid to USPTO (37 CFR 1.482)  but international search fee paid to USPTO (37 CFR 1.445(a)(2)) ..... \$690.00 \$ Neither international preliminary examination fee (37 CFR 1.482) nor  international search fee (37 CFR 1.445(a)(2) paid to USPTO ..... \$ 970.00 International preliminary examination fee paid to USPTO (37 CFR 1.482)  and all claims satisfied provisions of PCT Article 33(2)-(4) ..... \$96.00											
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$840.00							
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$130.00							
Claims	Number Filed	Number Extra	Rate								
Total Claims	-20=	0	X \$18.00	\$0.00							
Independent Claims	-3=	0	X \$78.00	\$0.00							
Multiple dependent claims(s) (if applicable)			+ \$260.00	\$							
TOTAL OF ABOVE CALCULATIONS =				\$970.00							
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).				\$							
SUBTOTAL =				\$970.00							
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$130.00							
TOTAL NATIONAL FEE =				\$							
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28.3.31) \$40.00 per property +				\$							
TOTAL FEE ENCLOSED =				\$1,100.00							
				Amount to be: refunded \$							
				charged \$							
a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>1,100.00</u> for the filing fee is enclosed b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. Ag duplicate copy of this sheet is enclosed. c. <input type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees, which may be required, or credit any overpayment to Deposit Account No. <u>05-1323</u> . A duplicate copy of this sheet is enclosed.											
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status											
SEND ALL CORRESPONDENCE TO: Evenson, McKcown, Edwards & Lenahan, P.L.L.C. 1200 G Street, N.W., Suite 700  Washington, D.C. 20005 Tel. No. (202) 628-8800 Fax No. (202) 628-8844											
SIGNATURE  Vincent J. Sunderdiek for Donald Evenson NAME 29, 004 REGISTRATION NUMBER May 25, 2000 DATE											

WO 99/27435

PCT/EP98/07571

DEVICE FOR CONTROLLING A DISPLAY SCREEN

The invention relates to a device having the characteristics of the preamble of Claim 1.

A device of this type is known from European Patent Document EP 0 796 766 A2. In this case, the actuating element is used for increasing the number of planes within the menu structure. It is indicated for this purpose that the planes are to be arranged to be distributed along the circumference of the display screen. This type of a device represents an additional difficulty for the user because he finds no clear assignment between the additional movement and the axial or rotational movement of the actuating element. The transition between the planes and within the menu structure also does not develop in a manner that is clear to him and finally draws the user's attention away from the traffic situation.

It is an object of the invention to provide a device of the initially mentioned type in the case of which there is a clear assignment between the display screen and the various moving possibilities of the actuating element.

According to the invention, this object is achieved by

means of the characteristics of Claim 1.

By means of the additional movement of the actuating element, an overriding point of the menu structure is now selected; by means of the rotary/longitudinal movement of the actuating element, a point of the menu structure is selected which is subordinate thereto. In concrete terms, this means, for example, that the possible menus are arranged in the marginal region, while the pertaining submenus or function or function values are situated in the central region. In this case, only the partial menus, the function and function values are arranged in the central region which are part of the one menu preferably selected by a preceding additional movement of the actuating element. Thus, the points which within the menu structure are disposed on the same step are situated in the marginal region, while the hierarchically lower points are to be found in the central region.

As known per se from European Patent Document EP 0 796 766 A, the actuating element can carry out a wobbling as well as a parallel displacement as the additional movement and can also be forcibly guided during this movement. The moving possibilities and limitations improve the handling of and the movement within the menu structure. Starting from the central position as the initial position of the actuating element, the additional movement is synonymous with a leaving of the plane

of the menu structure indicated in the central region and the selecting of the next-higher plane. The return movement into the starting position, in turn, indicates the transition from the just found higher plane into the next plane situated underneath. As the result, the user is provided with a tactile sense as to how he is moving within the menu structure.

An improvement of the invention relates to the problem of an operating error which may occur in the case of a device of this type. Particularly if a plurality of points are arranged within the frame region of the display screen, the risk of accidentally not "hitting" the desired point is particularly high. Another factor is the special situation in which the selection of these points takes place. The turning to the display screen frequently competes with the traffic situation. The time available for this purpose, as a rule, is very brief.

If the points arranged in the frame area are optically highlighted during and/or after the additional movement and are selected only when the actuating element is at least approximately back in the starting position, the danger of a faulty selection is largely avoided.

Although, by means of the additional movement, it is possible to optically select the point of the menu structure

arranged in the frame area, the selection will functionally only take place when the actuating element is back in the starting position. When the device is used in a vehicle for controlling different menus, such as the navigation system, the vehicle computer, the air conditioner, etc. and the assignment of the points arranged in the frame area to the individual menus, the term "functional selection" means the following:

As a result of the additional movement of the actuating element, the section of the marginal region assigned to the respective menu is optically stressed, for example, highlighted. The selection and therefore the controlling of the respective menu, for example, of the navigation, will, however, take place only when, after the optical highlighting of the corresponding marginal region section, the actuating element is returned back into the starting position. Only then will the navigation system be selected, for example, for the vehicle computer, instead of the menu previously shown on the display screen. If, in this case, the partial menus and/or functions and/or function values are displayed as points (for example, in the form of rectangular fields) within the interior surface of the display screen surrounded by the frame region, these points can now be activated preferably by means of the actuating element.

The transition to another menu again requires the preparatory selection of the respective marginal region section by means of the actuating element, in conjunction with the optical highlighting of this section and the subsequent functional selection by returning the actuating element into the starting position.

In the following, the invention will be further explained by means of the drawing.

Figure 1 is a view of a display screen which is used within the scope of the device according to the invention;

Figure 2 is a view of the display screen of Figure 1 when controlled by an actuating element known from European Patent Document EP 0 796 766 A;

Figure 3 is a view of a further development of the device of Figures 1 and 2; and

Figures 4 and 5 are views of the method of operation of the device of Figure 3.

Figure 1 is a basic view of the display screen provided within the scope of the invention. A marginal region 2 and a central region 3 are situated within a display surface 1 which

is identical to the picture surface of a display screen. Eight symbols for the menus to be controlled by means of an actuating element, which is not shown, are illustrated in the marginal region 2 at eight points which, with respect to the center point of the picture surface 1, are offset with respect to one another by approximately  $45^\circ$  respectively. These are the audio, navigation, television, parking air conditioner, etc. menus. "Adjustment" means "assigned to all adjustable functions and function values". "Off" indicates the possibility of switching off the display screen.

One of the eight menu points can be selected by an additional movement (wobbling or parallel movement) of the actuating element (not shown). For this purpose, the actuating element must be moved in a direction symbolized by an arrow 4. Here, the "audio" menu point is selected. This selection takes place by moving the actuating element in the direction indicated by the arrow 4 by a distance or an angle which exceeds a defined extent. As a result, the "audio" menu point is selected.

After its release, the actuating element returns to its inoperative position under the effect of a restoring force. Simultaneously, the hierarchically subordinate menu points assigned to menu point 4 appear within the display surface 1. These are the transmitting stations fixedly programmed within



a radio which is not shown. These are indicated in the central region. This is illustrated in Figure 2. One of the symbols, here, "antenna", is optically highlighted. This is the symbol of the station which was last selected. If the vehicle user carries out no further adjustments, this station remains tuned in.

If, on the other hand, he wants to change the station, he turns the actuating element about its longitudinal axis. This is a rotary push button, as known from European Patent Document EP 0 366 132 B1 and also described in European Patent Document EP 0 796 766A. In this case, one of the symbols assigned to the other stations, such as "classical", is optically highlighted instead of "antenna". The switching-over to this station takes place in that the rotary push button is moved in the longitudinal direction. Under the effect of a restoring spring, it subsequently moves back into its starting position.

If a switch-over is to now take place to a function of another menu, for example of the BC = vehicle computer menu, the rotary push button must be swivelled in the direction indicated by the arrow BC or displaced parallel thereto. The swivelling is accompanied by the display of the different functions of the vehicle computer in the central region, replacing the station symbols illustrated in Figure 2. A

vehicle computer function, such as the range, can be highlighted as a standard, or can be highlighted after a preparatory axial movement of the rotary push button. The selection of this function, that is, the display of the actual range of the vehicle, can then take place in that the rotary push button is optionally again moved axially. For example, in addition to the optically highlighted "range" symbol, the value of the range, for example, 225 km, will appear in the central region.

Immediately thereafter, a switch-over can take place to the navigation menu in that the additional movement of the rotary push button takes place in the direction of the "Navigation" arrow. The individual navigation parameters appear in the central region.

In this manner, it is possible to rapidly and securely switch between the individual menus, the partial menus, the function and the function values.

The further development of the invention illustrated by means of Figure 3 and on consists of not immediately triggering a function change during the translational displacement of the actuating element but of first only carrying out a stressing, for example, a highlighting, of the selected main menu point. As a result, a correction by the

operator is still possible at this point in time. The actual triggering of the function takes place only when the spring-centered actuating element is released.

The user wants to call up the "Audio" function range. In the example of Figure 3, the "Navigation" menu point was accidentally selected instead of "Audio". If the pertaining submenu were to be called immediately, the user would be in the navigation menu.

In order to avoid this, the call-up of the respective submenu does not take place immediately at the time of the selection but only when the actuating element is released. In the example, the user recognizes by the stressing of "navigation" that the wrong menu point is selected and can push the actuating element toward the left to the desired "Audio" menu point. This is illustrated in Figure 4. Also now, the pertaining "Audio" menu is not yet activated.

Only by releasing the spring-centered actuating element will the call-up of the desired "Audio" submenu take place, as illustrated in Figure 5. Figure 5 differs from the situation illustrated in Figure 2 only to the extent that now the lettering of the activated menu in the frame remains optically highlighted.

WO 99/27435

PCT/EP98/07571

## CLAIMS:

1. Device for controlling a display screen having an actuating element which can be rotated about a longitudinal axis and moved in the direction of the longitudinal axis, enabling a point of a menu structure consisting of menu, partial menus, function and/or function values to be selected and to be displayed as an optically highlighted field in the display screen, the actuating element having an initial position and being able to carry out an additional movement thereto with two additional degrees of freedom, characterized in that the additional movement of the actuating element enables a field arranged in a marginal region of the display screen and associated with a point of the menu structure to be selected, and in that the rotary/longitudinal movement of the actuating element enables a subordinate field of the menu structure associated with the field in the marginal region of the display screen to be selected in the central region of the display screen enclosed by the marginal region.

2. Device according to Claim 1, characterized in that the actuating element can carry out a wobbling movement as the additional movement.

3. Device according to Claim 1, characterized in that the actuating element can carry out a parallel displacement as the additional movement.

4. Device according to Claim 2 or 3, characterized in that the actuating element is forcibly guided for the additional movement.

5. Device according to one of Claims 1 to 4, characterized in that the actuating member carries out a reversible additional movement.

6. Device according to Claim 5, characterized in that the actuating element carries out the additional movement against the effect of a spring.

7. Device according to one of Claims 1 to 6, characterized in that the points arranged in the marginal region are optically highlighted during and/or after the additional movement and are selected only when the actuating element is at least approximately back in the initial position.

8. Device according to one of Claims 1 to 7, characterized in that, when the field is selected in the marginal region, the assigned selectable fields in the central



**PCT**

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Internationales Büro  
INTERNATIONALE ANMELDUNG VERÖFFENTLICHT NACH DEM VERTRAG ÜBER DIE  
INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT)

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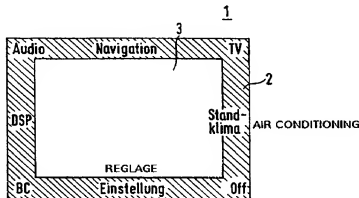
(51) Internationale Patentklassifikation <sup>6</sup> : <b>G06F 3/033</b>		<b>A1</b>	(11) Internationale Veröffentlichungsnummer: <b>WO 99/27435</b>
			(43) Internationales Veröffentlichungsdatum: 3. Juni 1999 (03.06.99)
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(30) Prioritätsdaten:	197 52 056.1 25. November 1997 (25.11.97) DE 198 43 421.9 22. September 1998 (22.09.98) DE		
(71) Anmelder (für alle Bestimmungsstaaten ausser US): BAYERISCHE MOTOREN WERKE AKTIENGESELLSCHAFT [DE/DE]; Patentabteilung AJ-3, D-80788 München (DE).		<b>(81) Bestimmungsstaaten:</b> JP, US, europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Veröffentlicht</b> <i>Mit internationalem Recherchenbericht.</i> <i>Vor Ablauf der für Änderungen der Ansprüche zugelassenen Frist: Veröffentlichung wird wiederholt falls Änderungen eintreffen.</i>	
(72) Erfinder; und			
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(74) Gemeinsamer Vertreter: BAYERISCHE MOTOREN WERKE AKTIENGESELLSCHAFT; Patentabteilung AJ-3, D-80788 München (DE).			

(54) Title: DEVICE FOR CONTROLLING A DISPLAY SCREEN

(54) Bezeichnung: VORRICHTUNG ZUR STEUERUNG EINER BILDSCHIRMANZEIGE

(57) Abstract

A device for controlling a display screen has an actuating element which can be rotated about a longitudinal axis and moved in the direction of the longitudinal axis, enabling a point of a menu structure consisting of menu, partial menus, functions and/or function values to be selected, and which can be represented as an optically highlighted field in the display screen. The actuating element has an initial position and can describe with relation thereto an additional movement with two additional degrees of freedom. The additional movement of the actuating element enables a field arranged in a marginal region (2) of the display screen and associated with a point of the menu structure to be selected. The rotary/longitudinal movement of the actuating element enables a subordinate field of the menu structure associated with the field arranged in the marginal region of the display screen to be selected in the central region (3) of the display screen enclosed by the marginal region.



Audio  
Betätigung  
Durch Neigen wird das  
Audiomenu aufgerufen  
ACTUATION AUDIO  
MENU IS CALLED  
UP BY STARTING

# Translation of Figure 1

Standklima	=	air conditioning when parked
Einstellung	=	adjustment
Betätigung	=	actuation
Durch Neigen wird das Audiomenü aufgerufen	=	audio menu is called up by tilting

## Translation of Figure 2

Antenne	=	antenna
Klassik	=	classical
Einstellung	=	adjustment
Standklima	=	air conditioning when parked
Bildschirm	=	display screen
Hauptmenüpunkte	=	main menu points
Dreh-Drück-Knopf mit joystick- ähnlicher Zusatz- funktionalität	=	rotary push button with joystick-like additional functionality



Translation of Figure 3

Standklima	=	air conditioning when parked
Einstellung	=	adjustment

## Translation of Figure 4

Standklima	=	air conditioning when parked
Einstellung	=	adjustment

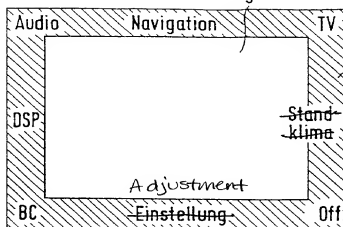
## Translation of Figure 5

Antenne	=	antenna
Klassik	=	classical
Einstellung	=	adjustment
Standklima	=	air conditioning when parked

1/3

1

FIG. 1

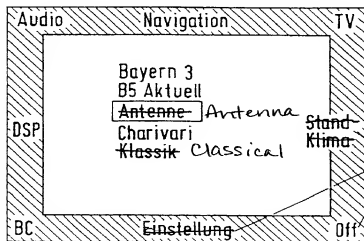


Air Conditioning when parked

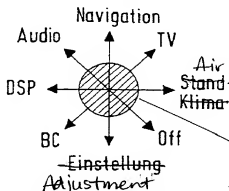


Betätigung Actuation  
 Durch Neigen wird das Audio menu is  
 Audiomenu aufgerufen called up by  
 tilting

FIG. 2



Bildschirm Display Screen  
 Air Conditioning when parked  
 Hauptmenüpunkte Main menu points



Air conditioning when parked  
 Dreh-Drück-Knopf mit Rotary push  
 joystick-ähnlicher button with  
 Zusatzfunktionalität joystick-like  
 additional  
 functionality

2/3

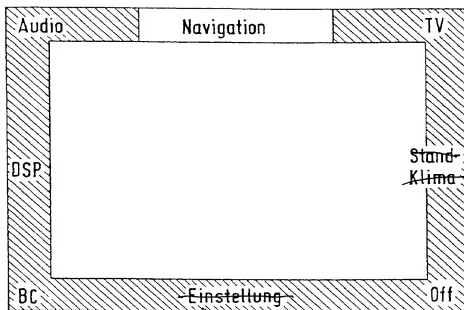
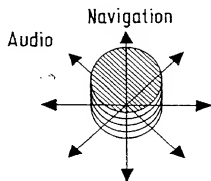


FIG. 3

*Air conditioning when parked*

*Einstellung  
Adjustment*



3/3

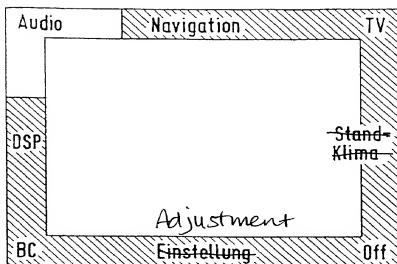


FIG. 4

Air conditioning  
when parked

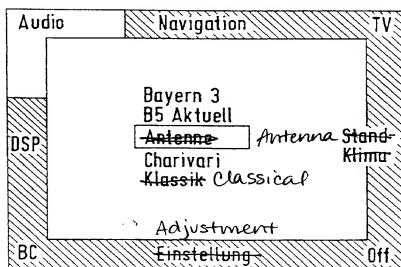
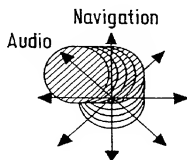
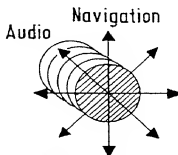


FIG. 5

Air conditioning  
when parked



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**COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY**  
(includes Reference to PCT International Applications)

ATTORNEY'S DOCKET  
NUMBER

951/48802

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

DEVICE FOR CONTROLLING A DISPLAY SCREEN

the specification of which (check only one item below)

☐ is attached hereto.

☒ was filed as United States application

Serial No. 09/555,144

on May 25, 2000

and was amended

☒ was filed as PCT international application

Number PCT/EP98/07571

on November 24, 1998

and was amended under PCT Article 19

on \_\_\_\_\_ (if applicable)


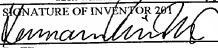

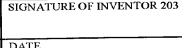
I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations. § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United State Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

**PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:**

COUNTRY (if PCT indicate PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
Germany	19752056.1	25 November 1997	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Germany	19843421.9	22 September 1998	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

Combined Declaration For Patent Application and Power of Attorney (Continued) (includes Reference to PCT international Applications)				ATTORNEY'S DOCKET NUMBER 951/48802	
I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national of PCT international filing date of this application:					
PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120					
U.S. APPLICATION NUMBER		U.S. FILING DATE		STATUS (Check one)	
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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration number)					
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202	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME	
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	POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE & ZIP CODE/COUNTRY	
203	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME	
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP	
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.					
SIGNATURE OF INVENTOR 201		SIGNATURE OF INVENTOR 202		SIGNATURE OF INVENTOR 203	
					
DATE 7.8.2000		DATE 07.08.2000		DATE	